

A

JC553 U.S. PTO
09/374681
06/16/99



Preliminary Classification:

Proposed Class:

Subclass:

NOTE: "All applicants are requested to include a preliminary classification on newly filed patent applications. The preliminary classification, preferably class and subclass designations, should be identified in the upper right-hand corner of the letter of transmittal accompanying the application papers, for example 'Proposed Class 2, subclass 129.' " M.P.E.P. § 601, 7th ed.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

NEW APPLICATION TRANSMITTAL

Transmitted herewith for filing is the patent application of

Inventor(s): **CRAIG H. BAKER ET AL****WARNING:** 37 C.F.R. § 1.41(a)(1) points out:

(a) A patent is applied for in the name or names of the actual inventor or inventors.

"(1) The inventorship of a nonprovisional application is that inventorship set forth in the oath or declaration as prescribed by § 1.63, except as provided for in § 1.53(d)(4) and § 1.63(d). If an oath or declaration as prescribed by § 1.63 is not filed during the pendency of a nonprovisional application, the inventorship is that inventorship set forth in the application papers filed pursuant to § 1.53(b), unless a petition under this paragraph accompanied by the fee set forth in § 1.17(i) is filed supplying or changing the name or names of the inventor or inventors."

For (title): **LOW INSERTION FORCE ELECTRICAL
SOCKET CONTACT****CERTIFICATION UNDER 37 C.F.R. § 1.10***

(Express Mail label number is mandatory.)

(Express Mail certification is optional.)

I hereby certify that this New Application Transmittal and the documents referred to as attached therein are being deposited with the United States Postal Service on this date 8-16-99, in an envelope as "Express Mail Post Office to Addressee," mailing Label Number EN 918266807, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

RICHARD J. BIRCH
(type or print name of person mailing paper)

+ J. Birch
Signature of person mailing paper

WARNING: Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. § 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.***WARNING:** Each paper or fee filed by "Express Mail" **must** have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. § 1.10(b).

"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will **not** be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

1. Type of Application

This new application is for a(n)

(check one applicable item below)



Original (nonprovisional)



Design



Plant

WARNING: Do not use this transmittal for a completion in the U.S. of an International Application under 35 U.S.C. § 371(c)(4), unless the International Application is being filed as a divisional, continuation or continuation-in-part application.

WARNING: Do not use this transmittal for the filing of a provisional application.

NOTE: If one of the following 3 items apply, then complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF A PRIOR U.S. APPLICATION CLAIMED and a NOTIFICATION IN PARENT APPLICATION OF THE FILING OF THIS CONTINUATION APPLICATION.

- Divisional.
- Continuation.
- Continuation-in-part (C-I-P).

2. Benefit of Prior U.S. Application(s) (35 U.S.C. §§ 119(e), 120, or 121)

NOTE: A nonprovisional application may claim an invention disclosed in one or more prior filed copending nonprovisional applications or copending international applications designating the United States of America. In order for a nonprovisional application to claim the benefit of a prior filed copending nonprovisional application or copending international application designating the United States of America, each prior application must name as an inventor at least one inventor named in the later filed nonprovisional application and disclose the named inventor's invention claimed in at least one claim of the later filed nonprovisional application in the manner provided by the first paragraph of 35 U.S.C. § 112. Each prior application must also be:

- (i) An international application entitled to a filing date in accordance with PCT Article 11 and designating the United States of America; or
- (ii) Complete as set forth in § 1.51(b); or
- (iii) Entitled to a filing date as set forth in § 1.53(b) or § 1.53(d) and include the basic filing fee set forth in § 1.16; or
- (iv) Entitled to a filing date as set forth in § 1.53(b) and have paid therein the processing and retention fee set forth in § 1.21(l) within the time period set forth in § 1.53(f).

37 C.F.R. § 1.78(a)(1).

NOTE: If the new application being transmitted is a divisional, continuation or a continuation-in-part of a parent case, or where the parent case is an International Application which designated the U.S., or benefit of a prior provisional application is claimed, then check the following item and complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

WARNING: If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. §§ 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. §§ 120, 121 or 365(c). (35 U.S.C. § 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. §§ 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

WARNING: When the last day of pendency of a provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, any nonprovisional application claiming benefit of the provisional application must be filed prior to the Saturday, Sunday, or Federal holiday within the District of Columbia. See 37 C.F.R. § 1.78(a)(3).

The new application being transmitted claims the benefit of prior U.S. application(s). Enclosed are ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

3. Papers Enclosed

A. Required for filing date under 37 C.F.R. § 1.53(b) (Regular) or 37 C.F.R. § 1.153 (Design) Application

5 Pages of specification + 1 ABSTRACT

3 Pages of claims

2 Sheets of drawing

WARNING: DO NOT submit original drawings. A high quality copy of the drawings should be supplied when filing a patent application. The drawings that are submitted to the Office must be on strong, white, smooth, and non-shiny paper and meet the standards according to § 1.84. If corrections to the drawings are necessary, they should be made to the original drawing and a high-quality copy of the corrected original drawing then submitted to the Office. Only one copy is required or desired. For comments on proposed then-new 37 C.F.R. § 1.84, see Notice of March 9, 1988 (1990 O.G. 57-62).

NOTE: "Identifying indicia, if provided, should include the application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application. This information should be placed on the back of each sheet of drawing a minimum distance of 1.5 cm. (5/8 inch) down from the top of the page . . ." 37 C.F.R. § 1.84(c).

(complete the following, if applicable)

The enclosed drawing(s) are photograph(s), and there is also attached a "PETITION TO ACCEPT PHOTOGRAPH(S) AS DRAWING(S)." 37 C.F.R. § 1.84(b).

formal

informal

B. Other Papers Enclosed

 Pages of declaration and power of attorney
 Pages of abstract
 Other

4. Additional papers enclosed

Amendment to claims

Cancel in this applications claims _____ before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)

Add the claims shown on the attached amendment. (Claims added have been numbered consecutively following the highest numbered original claims.)

Preliminary Amendment

Information Disclosure Statement (37 C.F.R. § 1.98)

Form PTO-1449 (PTO/SB/08A and 08B)

Citations

- Declaration of Biological Deposit
- Submission of "Sequence Listing," computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.
- Authorization of Attorney(s) to Accept and Follow Instructions from Representative
- Special Comments
- Other

5. Declaration or oath (including power of attorney)

NOTE: A newly executed declaration is not required in a continuation or divisional application provided that the prior nonprovisional application contained a declaration as required, the application being filed is by all or fewer than all the inventors named in the prior application, there is no new matter in the application being filed, and a copy of the executed declaration filed in the prior application (showing the signature or an indication thereon that it was signed) is submitted. The copy must be accompanied by a statement requesting deletion of the names of person(s) who are not inventors of the application being filed. If the declaration in the prior application was filed under § 1.47, then a copy of that declaration must be filed accompanied by a copy of the decision granting § 1.47 status or, if a nonsigning person under § 1.47 has subsequently joined in a prior application, then a copy of the subsequently executed declaration must be filed. See 37 C.F.R. §§ 1.63(d)(1)-(3).

NOTE: A declaration filed to complete an application must be executed, identify the specification to which it is directed, identify each inventor by full name including family name and at least one given name, without abbreviation together with any other given name or initial, and the residence, post office address and country or citizenship of each inventor, and state whether the inventor is a sole or joint inventor. 37 C.F.R. § 1.63(a)(1)-(4).

NOTE: "The inventorship of a nonprovisional application is that inventorship set forth in the oath or declaration as prescribed by § 1.62, except as provided for in § 1.53(d)(4) and § 1.63(d). If an oath or declaration as prescribed by § 1.63 is not filed during the pendency of a nonprovisional application, the inventorship is that inventorship set forth in the application papers filed pursuant to § 1.53(b), unless a petition under this paragraph accompanied by the fee set forth in § 1.17(l) is filed supplying or changing the name or names of the inventor or inventors." 37 C.F.R. § 1.41(a)(1).

- Enclosed

Executed by

(check all applicable boxes)

- inventor(s).
- legal representative of inventor(s).
37 C.F.R. §§ 1.42 or 1.43.
- joint inventor or person showing a proprietary interest on behalf of inventor who refused to sign or cannot be reached.

This is the petition required by 37 C.F.R. § 1.47 and the statement required by 37 C.F.R. § 1.47 is also attached. See item 13 below for fee.



Not Enclosed.

NOTE: Where the filing is a completion in the U.S. of an International Application or where the completion of the U.S. application contains subject matter in addition to the International Application, the application may be treated as a continuation or continuation-in-part, as the case may be, utilizing ADDED PAGE FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION CLAIMED.

- Application is made by a person authorized under 37 C.F.R. § 1.41(c) on behalf of all the above named inventor(s).

(The declaration or oath, along with the surcharge required by 37 C.F.R. § 1.16(e) can be filed subsequently).

Showing that the filing is authorized.
(not required unless called into question. 37 C.F.R. § 1.41(d))

6. Inventorship Statement

WARNING: If the named inventors are each not the inventors of all the claims an explanation, including the ownership of the various claims at the time the last claimed invention was made, should be submitted.

The inventorship for all the claims in this application are:

The same.

or

Not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made,
 is submitted.
 will be submitted.

7. Language

NOTE: An application including a signed oath or declaration may be filed in a language other than English. An English translation of the non-English language application and the processing fee of \$130.00 required by 37 C.F.R. § 1.17(k) is required to be filed with the application, or within such time as may be set by the Office. 37 C.F.R. § 1.52(d).

English

Non-English

The attached translation includes a statement that the translation is accurate. 37 C.F.R. § 1.52(d).

8. Assignment

An assignment of the invention to ANDERSON INTERCONNECT, INC

is attached. A separate "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or FORM PTO 1595 is also attached.

will follow.

NOTE: "If an assignment is submitted with a new application, send two separate letters-one for the application and one for the assignment." Notice of May 4, 1990 (1114 O.G. 77-78).

WARNING: A newly executed "CERTIFICATE UNDER 37 C.F.R. § 3.73(b)" must be filed when a continuation-in-part application is filed by an assignee. Notice of April 30, 1993, 1150 O.G. 62-64.

9. Certified Copy

Certified copy(ies) of application(s)

Country	Appln. No.	Filed
Country	Appln. No.	Filed
Country	Appln. No.	Filed

from which priority is claimed

is (are) attached.
 will follow.

NOTE: The foreign application forming the basis for the claim for priority must be referred to in the oath or declaration. 37 C.F.R. § 1.55(a) and 1.63.

NOTE: This item is for any foreign priority for which the application being filed directly relates. If any parent U.S. application or International Application from which this application claims benefit under 35 U.S.C. § 120 is itself entitled to priority from a prior foreign application, then complete item 18 on the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

10. Fee Calculation (37 C.F.R. § 1.16)

A. ~~Regular application~~

CLAIMS AS FILED				
Number filed	Number Extra	Rate	Basic Fee	
			37 C.F.R. § 1.16(a) \$760.00	
Total Claims (37 C.F.R. § 1.16(c)) <i>53</i>	- 20 =	× \$ 18.00	<i>0</i>	
Independent Claims (37 C.F.R. § 1.16(b)) <i>1</i>	- 3 =	× \$ 78.00	<i>0</i>	
Multiple dependent claim(s), if any (37 C.F.R. § 1.16(d))		+ \$260.00	<i>0</i>	

Amendment cancelling extra claims is enclosed.
 Amendment deleting multiple-dependencies is enclosed.
 Fee for extra claims is not being paid at this time.

NOTE: If the fees for extra claims are not paid on filing they must be paid or the claims cancelled by amendment, prior to the expiration of the time period set for response by the Patent and Trademark Office in any notice of fee deficiency. 37 C.F.R. § 1.16(d).

Filing Fee Calculation

\$ *760*

B. Design application
(\$310.00—37 C.F.R. § 1.16(f))

Filing Fee Calculation

\$ _____

C. Plant application
(\$480.00—37 C.F.R. § 1.16(g))

Filing fee calculation \$ _____

11. Small Entity Statement(s)

Statement(s) that this is a filing by a small entity under 37 C.F.R. § 1.9 and 1.27 is (are) attached.

WARNING: "Status as a small entity must be specifically established in each application or patent in which the status is available and desired. Status as a small entity in one application or patent does not affect any other application or patent, including applications or patents which are directly or indirectly dependent upon the application or patent in which the status has been established. The refiling of an application under § 1.53 as a continuation, division, or continuation-in-part (including a continued prosecution application under § 1.53(d)), or the filing of a reissue application requires a new determination as to continued entitlement to small entity status for the continuing or reissue application. A nonprovisional application claiming benefit under 35 U.S.C. § 119(e), 120, 121, or 365(c) of a prior application, or a reissue application may rely on a statement filed in the prior application or in the patent if the nonprovisional application or the reissue application includes a reference to the statement in the prior application or in the patent or includes a copy of the statement in the prior application or in the patent and status as a small entity is still proper and desired. The payment of the small entity basic statutory filing fee will be treated as such a reference for purposes of this section." 37 C.F.R. § 1.28(a)(2).

WARNING: "Small entity status must not be established when the person or persons signing the . . . statement can unequivocally make the required self-certification." M.P.E.P., § 509.03, 6th ed., rev. 2, July 1996 (emphasis added).

(complete the following, if applicable)

Status as a small entity was claimed in prior application

_____ / _____, filed on _____, from which benefit is being claimed for this application under:

35 U.S.C. § 119(e),
 120,
 121,
 365(c),

and which status as a small entity is still proper and desired.

A copy of the statement in the prior application is included.

Filing Fee Calculation (50% of A, B or C above)

\$ _____

NOTE: Any excess of the full fee paid will be refunded if small entity status is established and a refund request are filed within 2 months of the date of timely payment of a full fee. The two-month period is not extendable under § 1.136. 37 C.F.R. § 1.28(a).

12. Request for International-Type Search (37 C.F.R. § 1.104(d))

(complete, if applicable)

Please prepare an international-type search report for this application at the time when national examination on the merits takes place.

13. Fee Payment Being Made at This Time



Not Enclosed

No filing fee is to be paid at this time.

(This and the surcharge required by 37 C.F.R. § 1.16(e) can be paid subsequently.)

Enclosed

<input type="checkbox"/> Filing fee	\$ _____
<input type="checkbox"/> Recording assignment (\$40.00; 37 C.F.R. § 1.21(h)) (See attached "COVER SHEET FOR ASSIGNMENT ACCOMPANYING NEW APPLICATION".)	\$ _____
<input type="checkbox"/> Petition fee for filing by other than all the inventors or person on behalf of the inventor where inventor refused to sign or cannot be reached (\$130.00; 37 C.F.R. §§ 1.47 and 1.17(l))	\$ _____
<input type="checkbox"/> For processing an application with a specification in a non-English language (\$130.00; 37 C.F.R. §§ 1.52(d) and 1.17(k))	\$ _____
<input type="checkbox"/> Processing and retention fee (\$130.00; 37 C.F.R. §§ 1.53(d) and 1.21(l))	\$ _____
<input type="checkbox"/> Fee for international-type search report (\$40.00; 37 C.F.R. § 1.21(e))	\$ _____

NOTE: 37 C.F.R. § 1.21(l) establishes a fee for processing and retaining any application that is abandoned for failing to complete the application pursuant to 37 C.F.R. § 1.53(f) and this, as well as the changes to 37 C.F.R. §§ 1.53 and 1.78(a)(1), indicate that in order to obtain the benefit of a prior U.S. application, either the basic filing fee must be paid, or the processing and retention fee of § 1.21(l) must be paid, within 1 year from notification under § 53(f).

Total fees enclosed \$ _____

14. Method of Payment of Fees

Check in the amount of \$_____

Charge Account No. _____ in the amount of
\$_____

A duplicate of this transmittal is attached.

NOTE: Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 C.F.R. § 1.22(b).

15. Authorization to Charge Additional Fees

WARNING: If no fees are to be paid on filing, the following items should not be completed.

WARNING: Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges, if extra claim charges are authorized.

The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Account No.

37 C.F.R. § 1.16(a), (f) or (g) (filing fees)
 37 C.F.R. § 1.16(b), (c) and (d) (presentation of extra claims)

NOTE: Because additional fees for excess or multiple dependent claims not paid on filing or on later presentation must only be paid on these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency (37 C.F.R. § 1.16(d)), it might be best not to authorize the PTO to charge additional claim fees, except possibly when dealing with amendments after final action.

37 C.F.R. § 1.16(e) (surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application)
 37 C.F.R. § 1.17(a)(1)–(5) (extension fees pursuant to § 1.136(a)).
 37 C.F.R. § 1.17 (application processing fees)

NOTE: ". . . A written request may be submitted in an application that is an authorization to treat any concurrent or future reply, requiring a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. An authorization to charge all required fees, fees under § 1.17, or all required extension of time fees will be treated as a constructive petition for an extension of time in any concurrent or future reply requiring a petition for an extension of time under this paragraph for its timely submission. Submission of the fee set forth in § 1.17(a) will also be treated as a constructive petition for an extension of time in any concurrent reply requiring a petition for an extension of time under this paragraph for its timely submission." 37 C.F.R. § 1.136(a)(3).

37 C.F.R. § 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. § 1.311(b))

NOTE: Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 C.F.R. § 1.311(b).

NOTE: 37 C.F.R. § 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application . . . prior to paying, or at the time of paying, . . . the issue fee. . ." From the wording of 37 C.F.R. § 1.28(b), (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.

16. Instructions as to Overpayment

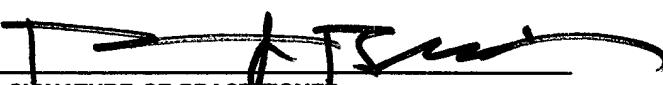
NOTE: ". . . Amounts of twenty-five dollars or less will not be returned unless specifically requested within a reasonable time, nor will the payer be notified of such amounts; amounts over twenty-five dollars may be returned by check or, if requested, by credit to a deposit account." 37 C.F.R. § 1.26(a).

Credit Account No. _____
 Refund

Reg. No. 20895

Tel. No. 603-526-2670

Customer No.


SIGNATURE OF PRACTITIONER

RICHARD J. BIRCH

(type or print name of attorney)

P.O. BOX 1818

P.O. Address

NEW LONDON, NH 03257

(New Application Transmittal 14-1)—page 10 of 11)

Incorporation by reference of added pages

(check the following item if the application in this transmittal claims the benefit of prior U.S. application(s) (including an international application entering the U.S. stage as a continuation, divisional or C-I-P application) and complete and attach the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED)

Plus Added Pages for New Application Transmittal Where Benefit of Prior U.S. Application(s) Claimed

Number of pages added _____

Plus Added Pages for Papers Referred to in Item 4 Above

Number of pages added _____

Plus added pages deleting names of inventor(s) named in prior application(s) who is/are no longer inventor(s) of the subject matter claimed in this application.

Number of pages added _____

Plus "Assignment Cover Letter Accompanying New Application"

Number of pages added _____

Statement Where No Further Pages Added

(if no further pages form a part of this Transmittal, then end this Transmittal with this page and check the following item)

This transmittal ends with this page.

APPLICATION

OF

CRAIG H. BAKER, CLYDE T. CARTER, ALEX S. FATER, URS F. NAGER,
CHRISTOPHER PALAGI, CHRISTINE SVELNIS AND MARK A. WOJOICKI

FOR

LOW INSERTION FORCE ELECTRICAL SOCKET CONTACT

BACKGROUND OF THE INVENTION

The present invention relates to electrical contacts in general, and more particularly to an electrical female socket contact that mates with a male pin contact to provide a sacrificial make-first/break-last contact arrangement for use in a "hot pluggable" electrical contact configuration.

There is a need for electrical contacts that can be connected and disconnected under an electrical load i.e., "hot pluggable" and at the same time have the capability of accommodating axial misalignment of pin and socket electrical contacts. Furthermore, the socket contact should be able to provide arc receiving "sacrificial" portions to maintain electrical integrity of the fully mated pin and socket contacts while at the same time being able to mate with a low insertion force.

It is accordingly a general object of the invention to fulfill this need.

BRIEF DESCRIPTION OF THE INVENTION

A low insertion force electrical socket contact employs a plurality of inwardly extending projections that function as arc receiving elements upon the initial mating of the socket contact with a corresponding male pin contact. The distance between the inwardly extending arc receiving elements measured across the socket contact bore is greater than the maximum transverse

distance of the male pin contact. Further insertion mating of the male pin contact establishes electrical contact with a plurality of integrally formed spring contacts in the socket contact.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an isometric view of the socket contact of the present invention;

Figure 2 is a side elevation of the socket contact of Figure 1;

Figure 3 is an end view of the socket contact of Figure 2;

Figure 4 is a plan view of the socket of Figure 2; and,

Figure 5 is a view in cross-section taken along line A-A of Figure 2.

DETAILED DESCRIPTION

Turning now to the drawings, and particularly to Figure 1, there is shown an electrical socket contact indicated generally by the reference numeral 10. The socket contact 10 preferably is stamped and rolled into the configuration shown in Figure 1 from a single sheet of material. The socket contact 10 has at least two inwardly projecting arc receiving elements 12 (one of which is shown in split form as 12a and 12b in Figure 1 because of the preferred stamped and rolled socket contact embodiment). It should be noted that the inwardly extending arc receiving elements 12 can take the form of an inwardly extending stamped "dimple" as shown in Figures 2, 4 and 5. The arc receiving elements 12 typically establish an initial electrical contact

2025 RELEASE UNDER E.O. 14176

with a corresponding male pin contact (not shown and depending upon mis-alignment of the male pin contact with the socket contact 10) and a subsequent last contact upon mating withdrawal ("make first/break-last"). The arc receiving elements 12 are spaced apart across the bore axis of the socket contact at a maximum distance that is greater than the maximum transverse distance of the male pin contact. This spacial configuration permits the initial contact mating of the arc receiving elements 12 to function as "sacrificial" elements while the fully mated male/female electrical contact is established by a plurality of integrally formed spring contacts 14 which thus maintain their electrical and physical integrity. It should be noted that the forward portions 14a of the spring contacts 14 cooperate with arc receiving elements 12, and the forward end 13 of the socket barrel itself to provide a "triple" arc receiving entrance for the male pin contact(not shown). Assuming enought axial mis-alignment, this would take place sequentially,as the socket contact ring 13, the arc receiving projections 12 and the forward end of the cantilevered beams 14 (see Figures 2-5)

Preferably, the socket contact 10 has an opening 16 to its bore that provides a "solder pot" for soldering an electrical cable (not shown) to the contact. In addition to providing a "solder pot", the opening 16 also furnishes a gas pressure relief during the solder operation. It will be appreciated that if the socket contact 10 is used as a "crimp" contact for an electrical cable, opening 16 limits the travel distance of crimp deformation.

In addition to the optional "solder pot" opening 16, the socket contact 10 has an optional spring housing latch 18 for removable insertion into a contact housing (not shown) in a conventional manner.

Having described in detail a preferred embodiment of our invention, it will be apparent to those in the art that numerous modifications can be made therein without departing from the scope of the invention as defined in the following claims.

What we claim is:

1. An electrical socket contact for mating with a pin contact comprising:
an electrically conductive barrel body having a pin contact engaging axial bore having:
at least two integrally formed, pin contact arc receiving elements upon disconnection of the mating pin and socket contacts; and,
a plurality of integrally formed, cantilevered spring contacts,
said pin contact arc receiving elements having a pin contact engaging surface positioned at a maximum distance from the socket contact bore axis that is greater than the maximum transverse dimension of the pin contact.

2. The electrical socket contact of claim 1 further having an aperture forming a solder pot in conjunction with the bore of said barrel body.

3. The electrical socket contact of claim 1 wherein said arc receiving elements comprise stamped inwardly extending projections.

4. The electrical socket contact of claim 1 wherein said socket contact is formed from a single sheet of material.

5. The electrical socket contact of claim 1 wherein engagement

with said pin contact mating takes place in the sequence of:
contact with the socket contactitself, then the arc receiving
elements and then the spring contacts.

ABSTRACT OF THE DISCLOSURE

A low insertion force electrical socket contact has a plurality of inwardly extending projections that function as arc receiving elements upon the initial mating of the socket contact with a corresponding male pin contact. The spacing of the inwardly extending arc receiving elements is such that the maximum transverse distance therebetween across the socket contact bore is greater than the maximum transverse distance of the male pin contact. Further insertion mating of the male pin contact establishes electrical contact with a plurality of integrally formed spring contacts in the socket contact.

CONFIDENTIAL - SECURITY INFORMATION

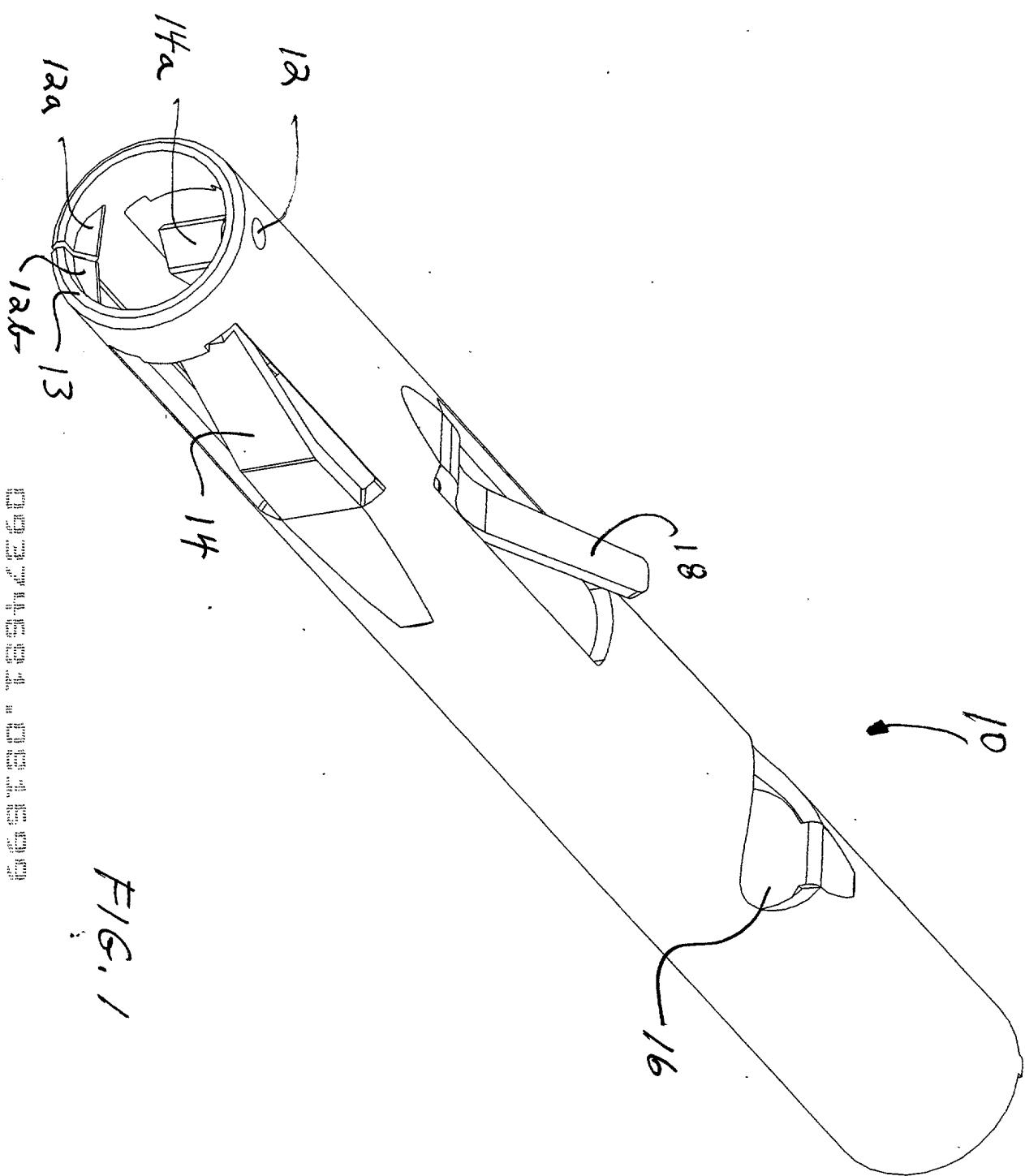


FIG. 1

